

Central Valley Regional Water Quality Control Board

Staff Report

Conditional Waiver of Waste Discharge Requirements For Discharges from Irrigated Lands

November 2002

SUMMARY AND RECOMMENDATIONS

As a result of changes in California Water Code Section 13269, waivers of waste discharge requirements in place as of 1 January 2000 will sunset at the end of this calendar year. After review of the waivers that apply to discharges from irrigated lands, staff has prepared an updated waiver with conditions for consideration by the Central Valley Regional Water Quality Control Board (Regional Board). This waiver would apply persons who discharge irrigation return flows (both surface and subsurface drainage), storm water runoff and operational spills to surface waters of the state. For the purposes of this waiver, the term “irrigated lands” applies to lands where water is applied for the purpose of producing crops and includes commercial nurseries, nursery stock production and managed wetlands. Waiver conditions are detailed in the enclosed draft resolution.

The proposed waivers, as well as a draft Initial Study and Negative Declaration, have been sent out for public review and written comments are due by 21 November 2002. Since the written comment period closes after the preparation of this Staff Report, staff recommendations may be revised prior to the Regional Board meeting.

The proposed waiver conditions encourage the development of (1) watershed groups that consist of both dischargers and other parties, or (2) farm-level water quality management plans. Watershed groups will jointly conduct work to meet waiver conditions while the owners and operators of irrigated lands would conduct the farm-level efforts. There are specific deliverables and deadlines that must be met in order to qualify for the waiver of WDRs.

This is part of an updated effort to address discharges of waste from irrigated lands. The waiver includes the following conditions:

- Plans will be developed to address regional or on-farm water quality issues
- Monitoring will be conducted to assess water quality impacts of the discharges
- Management practices will be developed and implemented, as necessary, to meet applicable receiving water limits

This waiver will apply throughout the Central Valley Region, but it is unknown how many of the 25,000+ dischargers in this category will take the steps needed to comply with the waiver

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conditions. Persons responsible for discharges from irrigated lands will have the option of operating under the waiver or submitting a report of waste discharge if the discharge contains wastes that pose a threat to water quality. Persons that manage irrigated lands that do not generate discharges to surface waters need not seek coverage under the waiver.

As proposed, the waiver will only be in effect for a maximum of three years (2003 through 2005) before being reevaluated and it may be terminated at any time for any individual or group of dischargers or for this entire category of discharges. This term limit will allow the Regional Board to assess the progress of the program and make adjustments as necessary.

Waiver Provisions

The proposed waiver sets forth two categories of waivers of waste discharge requirements. One category applies to dischargers who participate in a group effort on a watershed level to comply with the conditions of the waiver. The other category applies to individual dischargers who do not participate in a group watershed or subwatershed effort. The dischargers must comply with the conditions set forth in the waiver.

Regardless of which category a discharger falls under, the following requirements must be met:

- (1) Discharges shall not cause or contribute to conditions of pollution or nuisance as defined in Section 13050 of the California Water Code; and
- (2) Discharges shall not cause or contribute to exceedances of any Regional, State, or Federal numeric or narrative water quality standard.

The discharger shall be considered in compliance with this requirement if specified conditions are met. These conditions are detailed in the waiver provisions and include submittal of specific information and initiation of water quality monitoring in accordance with specified timetables.

The easiest way to obtain a waiver is by participating in a watershed group. These groups, which may include both dischargers and other stakeholders, are responsible for preparing and submitting information, conducting monitoring, as well as developing and monitoring management practices that reduce discharges of waste. The timetable calls for submittal of material starting in June 2003, with detailed reports due by June 2004. Water quality monitoring must be initiated by January 2005 and annual reports are due by the end of January of each year.

Individuals that do not participate in watershed efforts can obtain a waiver by submitting a Notice of Intent containing specified information, developing a written water quality management plan by September 2004 and conducting a water quality monitoring program starting in November 2004.

Regardless of whether the discharger is participating in a watershed group or qualifies for the waiver on an individual basis, the focus is to obtain water quality monitoring and the development and implementation of management practices that reduce discharges of waste.

The waiver is limited to discharges of waste that are not subject to the National Pollutant Discharge Elimination System permit program under the Clean Water Act.

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BACKGROUND

California Water Code Section 13260 requires persons discharging waste or proposing to discharge waste to submit a Report of Waste Discharge (ROWD). This ROWD is used by the Regional Boards to prepare waste discharge requirements (WDRs) that limit the discharges to the extent necessary to comply with applicable laws and regulations. The purpose of this regulatory program is to protect the beneficial uses of the waters receiving wastes.

If the Regional Board finds that it is not against the public interest, the Regional Board may waive WDRs for individual dischargers or categories of discharges (Water Code §13269). In 1982, the Regional Board adopted Resolution No. 82-036 waiving waste discharge requirements (WDRs) for 23 categories of discharges. Irrigated lands generate discharges in two of these categories – irrigation return waters and stormwater. Irrigated lands include irrigated cropland, managed wetlands and nurseries.

Resolution 82-036 included conditions necessary to receive a waiver of WDRs. Discharges of irrigation return waters must be “Operating to minimize sediment to meet Basin Plan turbidity objectives and to prevent concentrations of materials toxic to fish or wildlife.” WDRs are waived for stormwater “Where no water quality problems are contemplated and no federal NPDES permit is required.”

The staff report developed in support of Resolution No. 82-036 indicated that the Executive Officer would determine whether discharges pose a threat to water quality. If there is no potential to impact water quality, the Regional Board has no jurisdiction and there is no requirement to submit a ROWD except in cases where it is determined that additional information is needed.

Irrigation return waters and stormwater have been discharged from irrigated lands in the Central Valley Region for more than a century before the adoption of the Porter-Cologne Water Quality Control Act in 1969 (codified in California Water Code Division 7). Rather than require submittal of ROWDs, the Regional Board’s program has focused on promotion of voluntary compliance with management practices that minimize discharges of pollutants. Where the Board determines that a threat to water quality exists, other regulatory actions have been used, including discharge prohibitions and regulation under WDRs. In the irrigation return water category, WDRs have been used to regulate evaporation basins in the Tulare Lake Basin and to regulate return flows from the Grassland Bypass Project. A conditional discharge prohibition has also been utilized in regulating discharges from some irrigated rice acreage in the Sacramento Valley.

As a result of recent changes to California Water Code §13269, all waivers in place on 1 January 2000 will sunset at the end of the year 2002 if the Regional Board takes no action to renew them. Any new waivers adopted by the Regional Board after 1 January 2000 must be reviewed at least every five years and the Board must require compliance with any conditions placed on a waiver. If a new waiver is adopted, the new law requires that the Regional Board must also indicate

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whether the discharge would be subject to general or individual WDRs if the waiver conditions are not met. If no action is taken, the default approach for regulating discharges that pose a threat to water quality would be issuance of individual WDRs.

WATERSHED GROUPS

Addressing non-point source (NPS) discharges such as those from irrigated lands on a watershed basis is consistent with the State Water Resources Control Board's (SWRCB's) Plan for California Nonpoint Source Pollution Control Program (NPS pollution control program). Presently, there are two cases of successful use of the watershed approach in the Central Valley Region. The Rice Pesticides Program, formed in response to fish kills and drinking water concerns related to five rice pesticides, has reduced pesticide levels due to active participation by farmers, County Agricultural Commissioners, University of California Cooperative Extension, the Rice Industry, Department of Pesticide Regulation, the Regional Board and other stakeholders. Stakeholder participation in the Grassland Watershed, including formation of a Joint Powers Authority, has helped reduce levels of selenium and other constituents of concern into the wetland supply channels. Both efforts were successful because of the efforts of active concerned stakeholders in each watershed.

Based on comments received by staff, there appears to be a great deal of interest among stakeholders in addressing emerging water quality issues on a watershed basis. Given the supportive climate for this approach, staff expects that coverage under this conditional waiver will be sought primarily by groups of dischargers within a watershed rather than by individual dischargers.

The benefits of using a watershed approach include the following:

- **The group shares resources and costs.** Individual dischargers will not bear the burden of developing and funding an entire program on their own.
- **A relatively small number of monitoring sites can be used to characterize the discharge from a large area.** A handful of sites can provide much of the same information that would be gathered by monitoring tens of thousands of individual fields. Should water quality problems be found, monitoring can then be efficiently targeted to determine how problem discharges are related to specific management practices or cropping patterns within the watershed.
- **The impact on the availability of laboratory services will be manageable.** During the three-year term of this conditional waiver, the Regional Board will be conducting water quality monitoring at representative locations, but starting 1 January 2005 watershed groups must initiate their own Regional Board-approved watershed monitoring plans. Samples will have to be analyzed by certified labs and it is unlikely that the existing labs would have the capacity to handle samples from tens of thousands of additional individual clients in a timely manner. However, it is anticipated that watershed groups will require fewer sample analyses overall and that existing labs would be able to handle the more modest increase in demand for services.

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- **Technical information is disseminated to a large audience quickly and efficiently.** The group provides a forum for its members to share technical information rapidly. This should result in more dischargers adopting management practices proven at the local level to protect water quality.
- **Use of Regional Board resources are optimized.** Although a watershed approach will require significant staff involvement, overall such a program is expected to require fewer Regional Board resources than would be needed if individual WDRs were issued and individual ROWDs processed. Individual WDRs would require staff to customize permits for thousands of dischargers, potentially requiring hundreds of additional staff. Since it is not anticipated that Regional Board resources will greatly increase in the near future, a watershed approach has the potential to bring about water quality benefits sooner than might be expected if individual permits are issued. If general WDRs are issued, the commitment of staff time needed to implement an effective program would be similar to that needed for regulation under a conditional waiver using a watershed approach. However over the long run, staff involvement in watershed efforts should diminish as groups develop and become better organized. With a general WDR approach, the demand on Regional Board resources would remain relatively constant.
- **Watershed groups represent a number of interests.** While the conditional waiver does not dictate which entities should be included in any watershed group, historically groups have found it beneficial to have representation from a range of individuals, organizations and agencies. These have included grower groups, local water agencies, Resource Conservation Districts, commodity organizations, environmental interests, state agencies such as the Department of Water Resources and county governmental agencies, to name a few.
- **Water quality improvements can potentially occur sooner and be more widespread.** Dischargers cooperating in a watershed approach will be able to focus their pooled resources on the priorities of their region. A watershed group can undertake large-scale improvement projects such as tailwater recovery or water treatment systems when these might not be feasible for the individual discharger.
- **The watershed approach is flexible.** This new program is expected to evolve as more information is gathered and water quality problems are discovered and addressed.

IRRIGATED AGRICULTURE IN THE CENTRAL VALLEY

There are seven million acres of irrigated agriculture in the Central Valley Region. It is the dominant land use on the valley floor and often irrigation activities dominate flow and quality of valley floor water bodies. A survey conducted by Regional Board staff in the early 1990s identified more than 20,000 miles of waterways dominated by flows related to activities on irrigated lands.

Supply canals and drains make up a complex maze of constructed water bodies overlaying a natural drainage network, sustaining irrigated agriculture in the Central Valley Region. In many locations, the natural drainage courses have been integrated into the man-made system.

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Designed with the intent of delivering water and providing for drainage of irrigation return flows and storm water, these facilities have significantly altered the aquatic system. Dams reduce peak river flows and flooding and allow for increased flows during the summer months. Areas that received water only during the wet winter months now have water deliveries throughout the year thus altering the ecosystem in these water bodies.

No irrigation system is 100% efficient. Irrigation return flows are an integral part of that system. Where surface runoff occurs, the potential exists that these irrigation return flows can carry pollutants from the irrigated fields to waterways in the Central Valley Region and beyond.

The extensive use of water for irrigation in the Central Valley Region demonstrates that return flows have a significant potential to adversely impact water quality if pollutants are not managed at the farm level. Although there are no estimates for the Central Valley Region of the percentage of water that is diverted for irrigation use that ends up as return flows, the volume is likely to be large. For the United States as a whole, the United States Geological Survey (USGS, 1998) estimates that 61% of irrigation water goes towards consumptive use, 19% is lost during conveyance and 20% becomes return flow.

WATER QUALITY IMPACTS FROM IRRIGATION ACTIVITIES

The type and amount of wastes carried to surface waters by discharges from irrigated lands will vary by location as a result of irrigation method, rainfall amounts, crops grown, soil type, pesticides and fertilizers used, management practices and several other factors. It is important to note that pesticides are not the only constituents of concern. For example, relative to irrigation water supplies, irrigation return waters commonly carry higher levels of one or more of the following constituents:

- sediment
- pesticides
- nutrients
- salt
- trace elements (such as selenium)
- temperature

Discharges from an individual field have the potential to contain high enough levels of waste constituents to cause violations of water quality objectives in smaller water bodies. Cumulative impacts from numerous such discharges can adversely impact larger water bodies, such as the Sacramento-San Joaquin Delta or its tributary rivers.

In the mid-1990s, the SWRCB established technical committees to provide advice on controlling various categories of nonpoint source pollution including irrigation return flows and pesticides. The Technical Committees presented their recommendations to the SWRCB in 1995. The Irrigated Agriculture Technical Advisory Committee (TAC) was one of several committees organized to evaluate nonpoint source pollution control in California. The TAC spent several months writing

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the report of its findings, and worked within the framework set forth by the SWRCB to provide a uniform consensus building approach.

In its review of available data on water quality problems associated with irrigated agriculture, the Irrigated Agriculture TAC defined that problems could be related to one or more of three mechanisms:

- Waste constituents that are imported in or introduced into the irrigation water,
- Waste constituents that are mobilized by the practice of irrigation, and
- Waste constituents that are concentrated as a result of irrigation practices.

The report recognized that irrigated agriculture utilizes the bulk of the state's developed water supplies and contributes to NPS pollution from the expanse of production acreage and water usage.

Pesticides, often the focus of complaints the Regional Board receives relative to discharges from irrigated lands, are products commonly used to control insects, weeds and other pests. These pests can adversely impact the quality and quantity of crops grown under irrigation. Pesticides may be detected in water bodies that are dominated by agricultural drainage and at times in agricultural supply canals as a result of recycling of drainage water, pumped ground water or maintenance operations that are conducted on constructed canals and drains. In 1999, more than 113 million pounds of active ingredients were applied within the counties in the Central Valley Region.

The Regional Board has documented the impact to water quality from irrigation return flow and stormwater through their listing of impaired water bodies in conformance with the requirements of section 303(d) of the Clean Water Act. Many of these impairments are related to either irrigation return waters or stormwater runoff that contains organophosphate pesticides, primarily diazinon and chlorpyrifos.

EXISTING LAWS AND POLICIES

There are several laws and policies that apply to the two categories of discharges from irrigated lands.

Federal Clean Water Act (CWA) - This law provides a specific exclusion from the NPDES permitting program for irrigation return waters. Stormwater from irrigated lands is also not included in the NPDES stormwater permitting program. Under the CWA, water quality impacts caused by discharges from irrigated lands are addressed by promoting the use of best management practices. The CWA requires the preparation of total maximum daily loads (TMDLs) for impaired water bodies, including those impaired by nonpoint sources such as irrigation return flows and stormwater flows from irrigated lands. The TMDL process establishes load allocations for nonpoint sources of pollution but there are no implementation mechanisms under the CWA.

California Porter-Cologne Water Quality Control Act (Porter-Cologne Act)– This law provides the Regional Board with the authority to regulate discharges from both point and nonpoint source

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(NPS) discharges through the use of Waste Discharge Requirements (WDRs), the state equivalent to an NPDES Permit. The statutory mandate that WDRs be adopted, however, can be waived by a Regional Board “where such waiver is not against the public interest” (California Water Code §13269). The SWRCB and the Regional Boards can also make their own investigations or may require dischargers to carry out water quality investigations and report on water quality issues (California Water Code §13267).

Water Quality Control Plans (Basin Plans) – These plans are adopted by the Regional Board pursuant to requirements in both the State and Federal law. The Porter-Cologne Act requires the adoption of a Basin Plan that contains the guiding policies of water pollution management in each region. A Basin Plan identifies the existing and potential beneficial uses of waters of the State and establishes water quality objectives to protect these uses. The Basin Plan also contains implementation, surveillance, and monitoring plans. The Basin Plans form the basis for water quality protection in the Region. The Basin Plan is implemented primarily through issuance of Waste Discharge Requirements (WDRs) and NPDES permits. The Basin Plan for the Sacramento River and San Joaquin River Basins contains a specific control program for pesticides in irrigation return flows. Under this program, the Regional Board would hold hearings every two years to review the control effort and initiate appropriate regulatory response. This Basin Plan also contains specific water quality control programs for selenium and five pesticides used on rice fields. The Tulare Lake Basin Plan has sections specific to the construction and operation of evaporation basins.

Plan for California Nonpoint Source Pollution Control Program - This Plan is the SWRCB’s policy for controlling nonpoint source pollution including discharges from irrigated land. This Plan was adopted to satisfy the requirements of the federal CWA and the Coastal Zone Reauthorization Amendments of 1990 (CZARA). While giving the Regional Boards the discretion to use the most appropriate approach for any specific case, it recommends consideration of three different tiers of regulatory effort:

- Tier 1: Self-determined implementation of Best Management Practices
- Tier 2: Regulatory-based encouragement of management practices
- Tier 3: Effluent limits and enforcement

The plan also identified management measures for irrigation water management, pesticide management, erosion and sediment control and nutrient management, all of which will impact the quality of discharges from irrigated lands. These management measures are broad policy directives that are to be implemented statewide. An example of a management measure for irrigation water management states that (the State) promotes effective irrigation while reducing waste discharges to surface and ground waters. The broad policy directive, however, does not come with specific implementation measures. These must be crafted within the three-tier structure.

Management Agency Agreement between the State Board and Department of Pesticide Regulation (DPR) – DPR is the state agency with primary authority over registration and use of pesticides. This Agreement spells out how the SWRCB, DPR, Regional Boards and the County Agricultural Commissioners will deal with issues involving pesticides and water quality. In most

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cases, DPR and the County Agricultural Commissioners are given lead role in correcting any problems using the pesticide regulatory process before the Regional Board uses its authority under the Porter-Cologne Act.

Technical Advisory Committees – In the mid-1990s, the SWRCB established technical committees to provide advice on controlling various categories of nonpoint source pollution. Recommendations were received regarding both irrigation return flows and pesticides. In addition to the work related to the nonpoint source program, the SWRCB also formed a Technical Advisory Committee on how to implement the Inland Surface Waters Plan for agriculturally dominated waterbodies. Reports from these groups have been used to craft the state's nonpoint source implementation strategy.

California Environmental Quality Act (CEQA)- CEQA applies to discretionary activities proposed to be carried out by government agencies, including approval of WDRs and waivers of WDRs. Compliance is commonly achieved through the preparation of Environmental Impact Reports (EIR) or Negative Declarations. The Board's Basin Planning process has been determined to be functionally equivalent to completing an EIR.

**Summary of Key Regional Board Responsibilities Relative to
Discharges from Irrigated Lands**

- When a discharge is not a threat to water quality, the Regional Board has no jurisdiction and no action is needed.
- If a person submits a Report of Waste Discharge, the Regional Board must determine if the discharge poses a threat to water quality. If it does, the Board must determine whether it should be regulated under WDRs or a conditional waiver of WDRs.
- Adoption of WDRs or a conditional waiver of WDRs requires compliance with CEQA. This could mean the preparation of a Negative Declaration, an Environmental Impact Report (EIR) or an exemption from CEQA (since most of these discharges existed prior to enactment of CEQA).
- Regional Board Resolution No. 82-036 specifies waiver conditions for irrigation return waters and stormwater generated from irrigated land. For both stormwater and irrigation return waters, the waiver can only be applied if the discharge does not pose a threat to water quality. The Executive Officer is delegated the responsibility to determine whether a threat to water quality exists for an individual discharger in these categories.
- As a result of recent changes in California Water Code §13269, the waiver of WDRs for irrigation return flows and stormwaters will sunset on 1 January 2003. If the Regional Board wants to continue to regulate these categories of discharges through a waiver program, it will have to take action to renew or update the waiver requirements.
- The Basin Plan for the Sacramento River and San Joaquin River Basins contains a program for controlling pesticides in surface waters. Under this program, the Regional

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Board would hold hearings every two years to review the control effort and initiate appropriate regulatory efforts.

- The Basin Plans contain specific water quality control programs for selenium, evaporation basins and five pesticides used on rice fields.
- The federal Clean Water Act requires development of TMDLs for all impaired water bodies. Under the TMDL program, the Regional Board must establish waste load allocations for nonpoint source dischargers and develop an implementation program that will meet these allocations. Irrigated return flows and stormwater from irrigated land is a major source of several of the constituents being addressed by the TMDL program.
- The SWRCB's NPS Program Plan identifies three tiers of regulatory effort to achieve compliance with water quality objectives and encourages the Regional Boards to work with other organizations to achieve program goals. The Regional Boards must develop the most appropriate approach for specific problems following these guidelines.
- Pursuant to the NPS Program Plan, the Regional Boards must implement programs to ensure that dischargers are following specific management measures. There are management measures that apply to discharges from irrigated agriculture, including specific steps for erosion and sediment control, nutrient management, pesticide management, and irrigation water management. Under this program, the manager of an irrigated field is expected to follow appropriate management practices designed to control potential releases of multiple pollutants.
- The Management Agency Agreement (MAA) between the SWRCB and DPR specifies how pesticide-related water quality issues are addressed. The Regional Boards continue to be primarily responsible for the protection of water quality, but in general DPR uses its regulatory authority over pesticide use in an effort to correct problems before the water quality regulatory process is employed. A four-tier process similar to the SWRCB's three-tier NPS Program Plan is used in most situations. The Regional Boards can take regulatory action at any time they feel it is necessary.
- The Regional Board administers grants and participates in watershed efforts that in some cases develop local plans for control of discharges from irrigated lands. In order to formally incorporate the plans into the regulatory program, the Regional Board must adopt Basin Plan amendments or make compliance with the plan a condition of a WDR waiver.
- The Regional Board, in a water quality control plan or in WDRs, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted (Water Code §13243).

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OPTIONS

The Board has the option of using various approaches to achieve compliance with water quality objectives. The approaches can vary by region, crop or even by discharger. For example some dischargers in a specific category may be regulated by WDRs while others may qualify for waivers. The following options are discussed in the attached Table I:

- Watershed approach
- MOU/MAA
- Waivers of WDRs
- WDRs
 - Individual
 - General
 - Areawide
- Prohibition of Discharge

Regardless of the regulatory program in place, the goal remains the same – consistent implementation of management practices that result in compliance with water quality objectives. From the standpoint of the discharger, the greatest cost should relate to the implementation of the control efforts. As regulatory programs become more structured, monitoring and reporting will increase costs, but this increase is generally minor compared to the overall effort expected of the discharger. A more structured regulatory program will only add significant costs for those dischargers who are not implementing appropriate management practices.

EXISTING PROGRAMS

In 1975, NPDES permits were placed on 24 agricultural water supply and drainage entities. Based on recommendations from a SWRCB Technical Advisory Committee, these permits focused on monitoring irrigation return waters. This monitoring ceased in 1977 when the 95th Congress excluded irrigation return waters from the NPDES permit program.

The monitoring conducted showed no distinct problem except for sediment levels. No pesticide monitoring was conducted. The Regional Board focused efforts on sediment during the 1977-81 period using primarily federal 208 planning grants. The 208-planning program recommended that the Regional Board require use of best management practices to regulate low threat sediment discharges. In 1982, the Regional Board adopted Resolution No. 82-036 waiving WDRs for irrigation return waters and several other categories of low threat discharges. Even though stormwater was included in the waiver policy and this waiver would apply to runoff from irrigated lands, there was little available data and therefore probably no Regional Board consideration of runoff from agricultural areas at the time the Resolution was adopted.

Since that time, the majority of persons discharging from irrigated lands have never been contacted directly by the Regional Board. There have been no inspections to evaluate compliance with WDR waiver conditions but monitoring has continued to determine threats to water quality. When water quality impacts have been demonstrated to occur due to irrigation return flow discharges, the Regional Board has used its regulatory options to correct these

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problems. The Regional Board has established four major programs addressing specific water quality issues related to irrigation return waters:

Rice Pesticide Control Program - During the early 1980s pesticides discharged from Sacramento Valley rice fields caused fish kills in drains and taste complaints regarding the City of Sacramento drinking water supply. The Regional Board has worked with the state's pesticide regulatory agency (formerly Department of Food and Agriculture, currently Department of Pesticide Regulation), the rice industry and numerous other organizations to develop methods to control these discharges. In 1990, the Regional Board adopted a conditional prohibition of discharge for irrigation return flows containing five specific pesticides commonly used on rice fields. This prohibition is waived if the discharger is following management practices approved by the Regional Board.

Selenium Control Program - In the mid-1980s, selenium levels in subsurface agricultural drainage from the Grassland watershed were determined to be a threat to waterfowl in the wetland areas. A control program adopted in 1988 stressed the use of improved irrigation efficiency to reduce selenium discharges. The program was updated in 1996 to require WDRs for the control of selenium. WDRs for the Grassland Bypass Project, which serves approximately 97,000 acres of irrigated agricultural land, were adopted in 1998.

Evaporation Basins - Agricultural evaporation basins are utilized for the disposal of saline drainwater where there are no opportunities for discharge into the San Joaquin River. Between 1972 and 1985, 28 evaporation ponds were constructed covering a surface area of about 7,100 acres, mainly in the environs of the Tulare Lake Basin. Presently only 10 ponds with a surface area of about 4,900 acres are active and managed by seven operators. The remainder have been voluntarily deactivated due to the high costs of meeting the waste discharge requirements and mitigation measures, or closed by order of the State and Regional Boards due to toxic effects to waterbirds from selenium present in the impounded waters.

Development of TMDLs for Nonpoint Sources - TMDLs are required under section 303(d) of the federal Clean Water Act for all impaired water bodies. The Regional Board has listed several water bodies as impaired due to pesticide runoff. A TMDL report will be prepared to quantify the impact and the options available to the Regional Board. These reports will form the basis of a proposed Basin Plan Amendment report covering the regulatory options and recommended mechanisms for controlling these pollutants. The Regional Boards have the responsibility to complete and implement TMDLs.

The waiver will not supersede the provisions of regulatory programs already adopted by the Regional Board. It is anticipated that watershed groups will work with the Regional Board in developing future control efforts on a local level.

DISCUSSION

Due to the extent of irrigated agriculture in the Central Valley Region and limitations on staff resources, the Regional Board has historically had to prioritize efforts to address water quality impacts associated with this land use. For the past two decades, the Board has focused its efforts

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on the most serious water quality problems associated with irrigation return waters. Since 1982, the Regional Board has waived WDRs for low priority discharges from irrigated lands while focusing its limited resources for regulatory control efforts on selenium discharges, disposal to evaporation basins, rice pesticide return flows and discharges from confined animal facilities.

Redirection of existing resources would not provide the staffing needed to regulate all discharges from irrigated lands with individual WDRs. Realistically, the Regional Board must work with waivers, general orders or areawide orders to address water quality problems associated with this category of dischargers. These types of policies and orders would be more effective if they are tailored to address local water quality issues and would best be developed after obtaining the initial round of results from local monitoring efforts. Staff recommends that a new program for regulating discharges from irrigated lands be based on a waiver with conditions. The conditions should include (1) the requirement that discharges not cause or contribute to conditions of pollution or nuisance or cause or contribute to exceedances of water quality standards, (2) monitoring programs, (3) implementation of management practices, and (4) demonstrated progress in meeting water quality objectives based on the timeframe included in the draft resolution. The staff also recommends that a new waiver be limited in duration to three years, instead of the allowable five years. The effectiveness of the waiver conditions and monitoring results can be evaluated in the interim and be used to revise the program later. The new program should take advantage of existing programs and policies.

These include:

- The State and Regional Board's Strategic Plan
- The Plan for California's Nonpoint Source Pollution Control Program
- The Total Maximum Daily Load (TMDL) Program

Key elements of these plans that apply to discharges from irrigated lands include:

- Working on a watershed level to comprehensively address water quality issues through the development of unique solutions that reflect the conditions found within the watershed.
- Developing control programs with assistance from other agencies, organizations and stakeholders.
- Setting goals for reducing discharges where necessary to meet water quality standards.
- Monitoring progress to verify that the process being followed is effective.

The Regional Board must consider the workload associated with any new program. There are more than 25,000 entities/individuals that discharge from irrigated lands. In the past the Regional Board's budget did not allocate staff to enforce the 1982 waivers. Therefore, the Regional Board must take into account staff resources in determining the nature of a new program.

Staff recommends that monitoring and management practices be addressed through the watershed process. This will allow the Regional Board to deal with hundreds or thousands of dischargers through a single entity. Entities could be grouped by watershed, sub-watershed,

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commodity, types of chemicals/fertilizers used, or other criteria. This would reduce the administrative burden of both the Regional Board and the discharger. Watershed groups are forming in the valley, but it is too early to tell whether they will be available to all dischargers to participate in or if they will have the capability to deal effectively with local water quality issues. During the interim period of a short-term waiver, the effectiveness of the watershed approach can be evaluated as well as giving the Board and discharger the opportunity to develop the water quality data needed to set priorities for action.

Since the watershed approach would serve in lieu of the WDR process, the Regional Board should expect it to provide the type of information typically provided by the discharger. This would include:

- Discharger identification
- Discharge locations
- Documentation that appropriate pollution control measures are in place and are effective

Identifying the lead organizations and agencies participating in the watershed group and the parties they represent would satisfy the requirement for discharger identification during the start-up period when participants are still being added. By 30 June 2004 a complete list of participating organizations and agencies must be provided to the Regional Board.

The Regional Board should also expect watershed groups to adopt the same approach to insuring control of discharges as is expected of dischargers operating under WDRs, including:

- Promotion of management measures in the NPS management plan
- Development of new control measures where necessary
- Water quality monitoring
- Meeting specific targets according to timelines set by the Regional Board

The cost of developing this information and the cost of educational programs, technical assistance and other support for the discharger are likely to be reduced by using the watershed approach. If dischargers must pay to support activities of a watershed group, it is anticipated that the costs would be less than if they were operating under WDRs and paying annual fees, where the annual fee alone for this group would be in excess of 10 million dollars (25,000+ dischargers times an annual fee of \$400 or more). In addition, under WDRs the individual dischargers would have to pay for monitoring and the preparation and submittal of reports.

In some cases it is anticipated that dischargers will not have watershed groups available to work with or they may prefer not to work with these organizations. Staff recommends that these dischargers obtain a waiver by submitting specific information and developing a farm-level water quality management program.

Waiver programs are required to include conditions that apply to dischargers. With more than 25,000 dischargers in this category, the Regional Board must expect that some dischargers will not willingly comply with the conditions. If, after formal notification, a discharger fails to take the steps necessary to comply with waiver conditions, staff recommends that a Report of Waste

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Discharge (ROWD) be required and the discharge be regulated under WDRs. A Notice of Intent (NOI) could serve in lieu of the ROWD if a general WDR has been adopted.

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Table I
REGIONAL BOARD REGULATORY AND ENFORCEMENT MECHANISMS

ACTION	DESCRIPTION OF ACTION	POTENTIAL USE
Basin Plan Amendment	The Basin Plan specifies the beneficial uses and water quality objectives for waters in the Region. It contains an implementation program for meeting the objectives.	The Basin Plan describes how the Board will address various categories of discharges. It already contains detailed descriptions of control programs addressing rice pesticides, selenium and evaporation basins. The plan can set timetables and establish a prohibition of discharge.
Watershed Management Plans	Stakeholders within a watershed, including representatives of the Regional Board, develop and implement a plan to protect water quality and achieve other goals such as enhancement of the fishery or flood protection.	Use of the watershed approach is part of the Regional Board's Strategic Plan. While it often involves coordinated cooperative efforts, it does not preclude the use of regulatory tools to control discharges. Plans developed through the watershed process can be incorporated into the Basin Plan or WDRs.
Waste Discharge Requirements	Individual Orders are issued to dischargers allowing discharge of specified quantities and qualities of waste to land or surface waters. The limitations placed on the discharge are designed to ensure compliance with water quality objectives in the Basin Plans and protect beneficial uses. To obtain WDRs, the discharger must submit a Report of Waste Discharge and the requirements of CEQA must be met. All dischargers must submit monitoring reports and most dischargers pay an annual fee.	The Board can use this approach to regulate any discharge to waters of the state. The discharger would be responsible for providing enough information regarding the chemicals and volumes to be discharged and receiving waters to allow preparation of a permit. Annual fees would cover staff costs and the discharger would cover monitoring costs.
General Waste Discharge Requirements	The Board adopts a general order setting limits that must be met by a specified type of discharger and assures compliance with CEQA. Individual dischargers submit a Notice of Intent to comply with the order in lieu of a Report of Waste Discharge	This type of Order could be used to regulate a category of dischargers or those dischargers that do not meet the conditions for a waiver of WDRs.

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ACTION	DESCRIPTION OF ACTION	POTENTIAL USE
Areawide Waste Discharge Requirements	The Board may adopt an areawide strategy using either irrigation districts or return flow groups. These permits set limits that must be met by a specified type of discharge along with a CEQA document addressing the permit.	Areawide WDRs were issued by the Board in the 1970s when the Clean Water Act required NPDES permits for irrigation return flows. The NPDES permits were rescinded when the law changed, but this approach could be used to address local water quality issues. The Board could rank the irrigation districts according to their impacts on water quality. The agencies that most degraded water quality would be issued WDRs first. The irrigation districts with lower list status, and thus less threat to water quality, would have a grace period to improve the quality of their irrigation return water and thus avoid WDRs. If irrigation districts issued WDRs demonstrated improvement of their irrigation return waters, their WDRs could eventually be withdrawn.
Waivers	The requirement to submit a ROWD or obtain a waste discharge requirement may be waived by the Board for specific discharges where such waivers are not against the public interest. Such waivers must be conditional and may be terminated at any time by the Board. (Water Code Section 13269)	Waiver conditions can require actions by the discharger such as compliance with specified management practices and submittal of monitoring reports. If the ROWD is not waived, the discharger must provide sufficient information to verify that waiver conditions will be met. If the discharge qualifies for a waiver, all or a portion of the filing fees can be refunded (Water Code Section 13260 (e)). That portion of the fees retained would cover review of the proposed discharge.
National Pollutant Discharge Elimination System (NPDES) Permits	NPDES permits are issued by the Board pursuant to the federal Clean Water Act. They are used to regulate discharges from point sources such as sewage treatment plants and stormwater to surface waters. As a result of 1977 amendments to the law, these types of permits are not applicable to nonpoint sources such as agricultural return flows. In California, the NPDES permits are also WDRs and serve the same purpose - to restrict the volume and concentration of waste discharged in order to ensure compliance with Basin Plan objectives.	This type of permit is routinely issued to point source dischargers. Federal laws and regulations do not allow issuance of NPDES permits for irrigation return flows or stormwater runoff from agricultural lands.

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ACTION	DESCRIPTION OF ACTION	POTENTIAL USE
Memorandum of Understanding/Management Agency Agreements	The Board enters into an MOU or MAA with another agency to formally specify the relationship between the two organizations. The MAA often provides more detail and entrusts the other agency with additional responsibilities with respect to water quality control efforts.	The State Board has already signed a MAA with California Department of Pesticide Regulation that addresses water quality issues related to pesticides. Additional MOUs/MAAs could be developed with other agencies.
Cleanup and Abatement Orders	This is an enforcement order that directs a discharger to clean up waste, abate the effects of the waste, or to take other remedial action. It can be issued by the Board or the Executive Officer to parties that have caused or threaten to cause a condition of pollution of nuisance. No CEQA document must be prepared prior to issuance of such an order.	This type of enforcement action is best applied to individual parties that are conducting activities that require prompt attention. The legality of applying this type of order to a class of dischargers (such as those parties discharging a specific pesticide) is questionable.
Cease and Desist Orders	This is an enforcement order issued by the Board to dischargers that are in violation or threaten to violate WDRs or discharge prohibitions. The order can direct the discharger to comply forthwith, comply in accordance with a timetable or to take preventative action to avoid threatened violations.	Under the present circumstances, this type of order would have limited use in the control of pesticides from nonpoint sources. The Board would have to have WDRs or prohibitions in place for this type of order to apply.
Prohibition of Discharge	The Board, in a water quality control plan or in WDRs, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted. (Water Code Section 13243)	This process would allow the Board to address a large number of discharges in any area. When adopted into the Basin Plan, other state agencies must operate in compliance with the prohibition (Water Code Section 13247), and thus would directly or indirectly assist in obtaining compliance.
Request for Technical Information	The Board may require any person discharging or proposing to discharge waste to furnish technical or monitoring reports.	This type of report could be used to obtain verification that dischargers are following specific management practices and/or obtain monitoring that verifies that water quality objectives are being met.